Test Date: January 30, 2012
Tester: Daisy Jin

Tx Model No.: VT-4E150-00-800
Tx S/N: 178482

Power Amplifier Model No.: AMP-4-150-30-00
PA S/N: 191483

Test Equipment

| Device | Manufacturer | Model | Serial Number | Cal/Char Date | Due date |
|---|---|---|---|---|---|
| Power Meter | Bird | 4421 | 4937 | | |
| Power Sensor | Bird | 4022 | 11195 | Mar. 11, 2011 | Mar. 11, 2013 |
| Spectrum Analyzer | Agilent | E4440A PSA Series | US40420232 | Jun. 14, 2011 | Jun. 14, 2012 |
| Real Time Spectrum Analyzer | Tektronix | RSA 5103A | B010197 | Jan. 11, 2012 | Jan. 11, 2013 |
| Multimeter | Fluke | 8845A | 9480008 | Apr. 08, 2011 | Apr. 08, 2013 |
| High Pass Filter | Lorch Microwave | 5HPX-X216-N | AM1 | | |
| Attenuator | Bird | 500-WA-FFN-20 | 1189375 | Jan. 24, 2012 | Jan. 24, 2014 |
| Attenuator | Bird | 10-18A-MFN-10 | DE # 3257 | Jun. 28, 2011 | Jun. 28, 2013 |

1. Test Name: RF Power Output
   Rule Part No.: Pt 2.1046(a), Pt 90, Pt 90.210, RSS-131
   Requirements: Pt 2.1046(a), Pt 90, Pt 90.210, RSS-131

Equipment: Bird Power Meter: Model 4421; S/N: 4937
Bird Power Sensor: Model 4022; S/N: 11195

DC Power Consumption
Vdc = 13.8 V
Icc = 5.2 A (Tx + Power Amplifier)

| Tx frequency (MHz) | Input (W) | Input (dBm) | Output (W) | Output (dBm) |
|---|---|---|---|---|
| 138.0000 | 6.39 | 38.1 | 20.4 | 43.1 |
| 156.0000 | 5.88 | 37.7 | 20.5 | 43.1 |
| 162.0000 | 5.60 | 37.5 | 20.3 | 43.1 |
| 174.0000 | 6.04 | 37.8 | 19.9 | 43.0 |

Note: The power amplifier was set to 20W at 138MHz with 6.4W input power.

2. Test Name: Spurious Emissions at Antenna Terminals (Conducted)
   Rule Part No.: FCC Pt 2.1051(a), IC RSS-131
   Requirements: 43 + 10log(Po) = 43 + 10log(20) = 56.0 dBc
   50 + 10log(20) = 63.0 dBc
   Or -43 dBm
   -50 dBm

(a) Harmonics
Equipment: Agilent E4440A PSA Series Spectrum Analyzer, S/N: US40420232

| Emission (MHz) | Level (dBc) |
|---|---|
| 138.00 | 0 |
| 276.00 | 84 |
| 414.00 | >= 101 |
| 552.00 | >= 103 |
| 690.00 | >= 101 |
| 828.00 | >= 102 |
| 966.00 | >= 101 |
| 1104.00 | >= 101 |
| 1242.00 | >= 102 |
| 1380.00 | >= 102 |

| Emission (MHz) | Level (dBc) |
|---|---|
| 156.00 | 0 |
| 312.00 | 97 |
| 468.00 | >= 101 |
| 624.00 | >= 101 |
| 780.00 | >= 103 |
| 936.00 | >= 103 |
| 1092.00 | >= 103 |
| 1248.00 | >= 101 |
| 1404.00 | >= 102 |
| 1560.00 | >= 103 |

| Emission (MHz) | Level (dBc) |
|---|---|
| 162.00 | 0 |
| 324.00 | 98 |
| 486.00 | >= 102 |
| 648.00 | >= 103 |
| 810.00 | >= 101 |
| 972.00 | >= 102 |
| 1134.00 | >= 102 |
| 1296.00 | >= 103 |
| 1458.00 | >= 103 |
| 1620.00 | >= 103 |

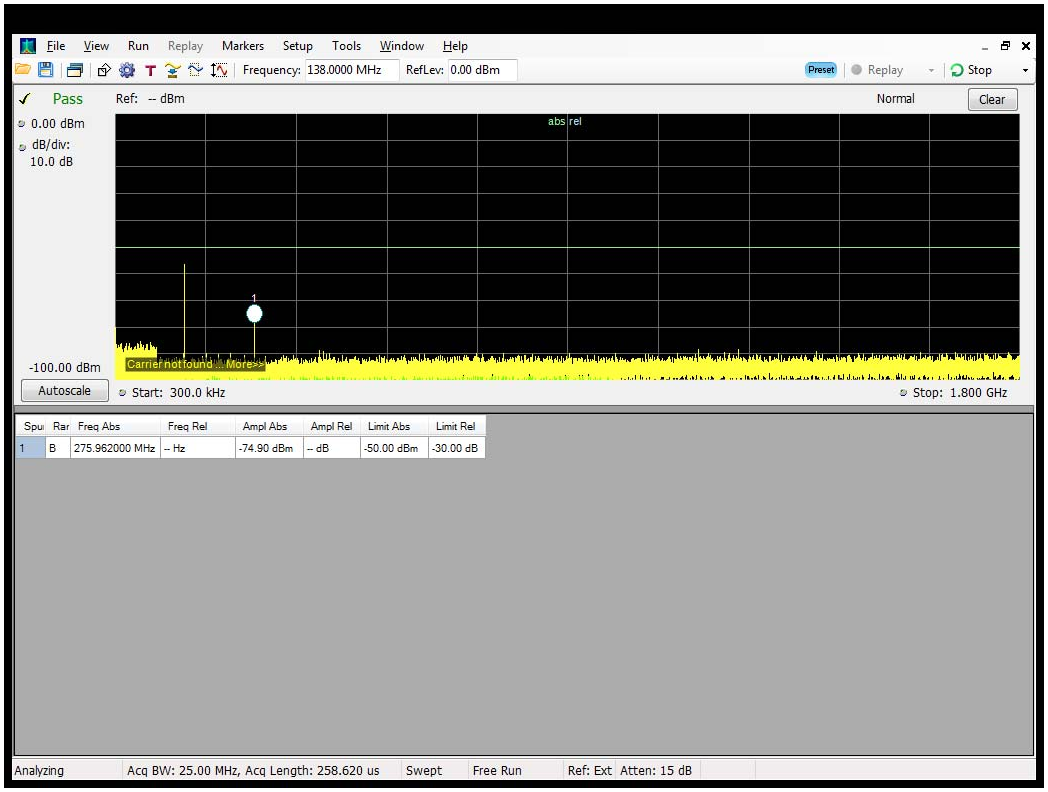
| Emission (MHz) | Level (dBc) |
|---|---|
| 174.00 | 0 |
| 348.00 | 103 |
| 522.00 | >= 105 |
| 696.00 | >= 105 |
| 870.00 | >= 105 |
| 1044.00 | >= 104 |
| 1218.00 | >= 105 |
| 1392.00 | >= 104 |
| 1566.00 | >= 103 |
| 1740.00 | >= 104 |

(b) Spurious and harmonics
Equipment: Tektronix RSA 5103A Real-Time Signal Analyzer

Limit line was set at -50dBm.

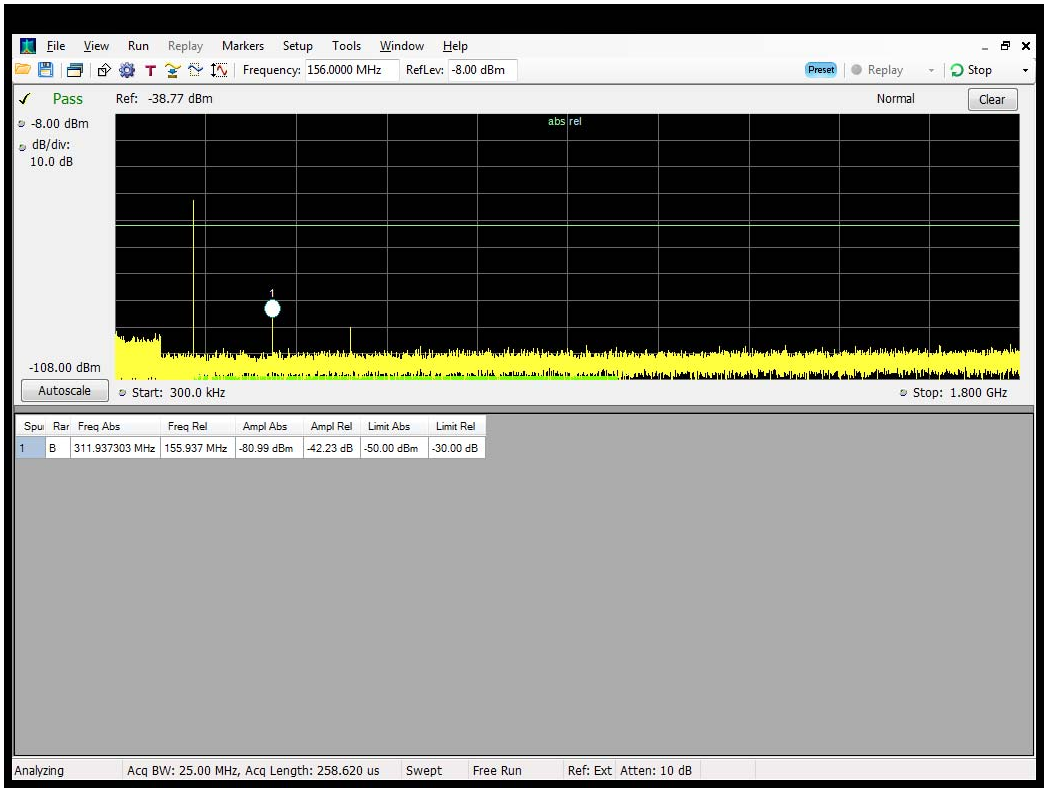
(1) Tx Frequency: 138.0000MHz

With a high pass filter inserted



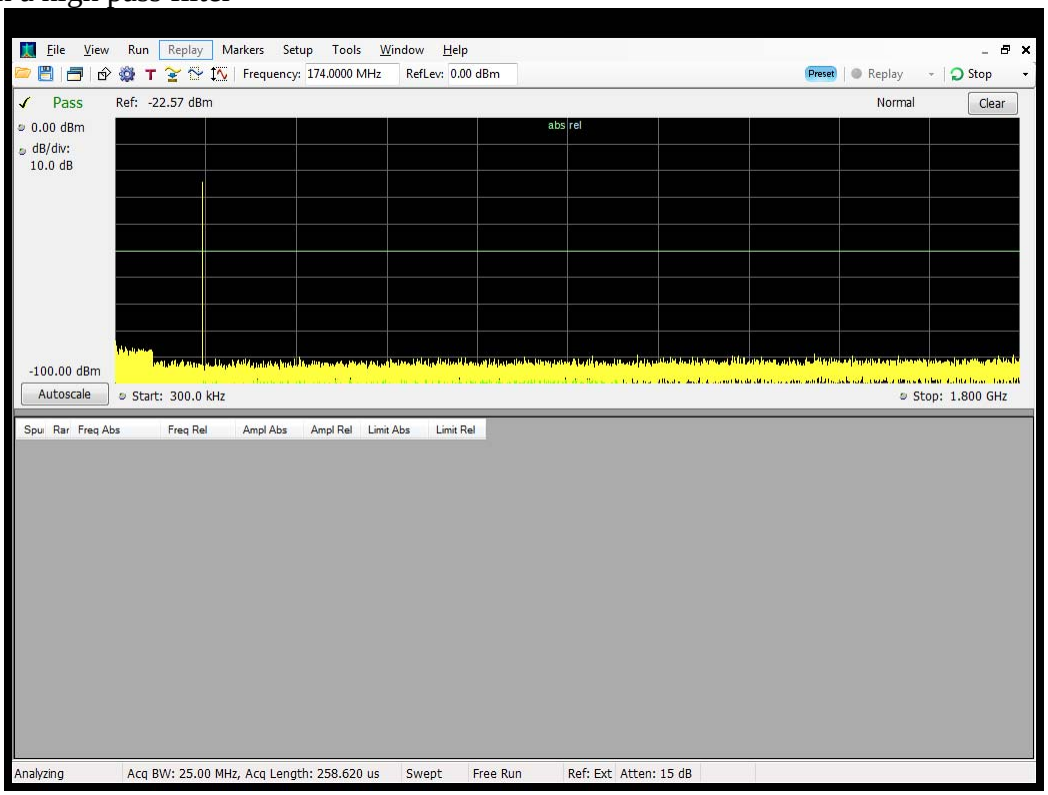
(2) Tx Frequency: 156.0000MHz

With a high pass filter



(4) Tx Frequency: 174.0000MHz

With a high pass filter




3. Equipment set up for conducted emissions: